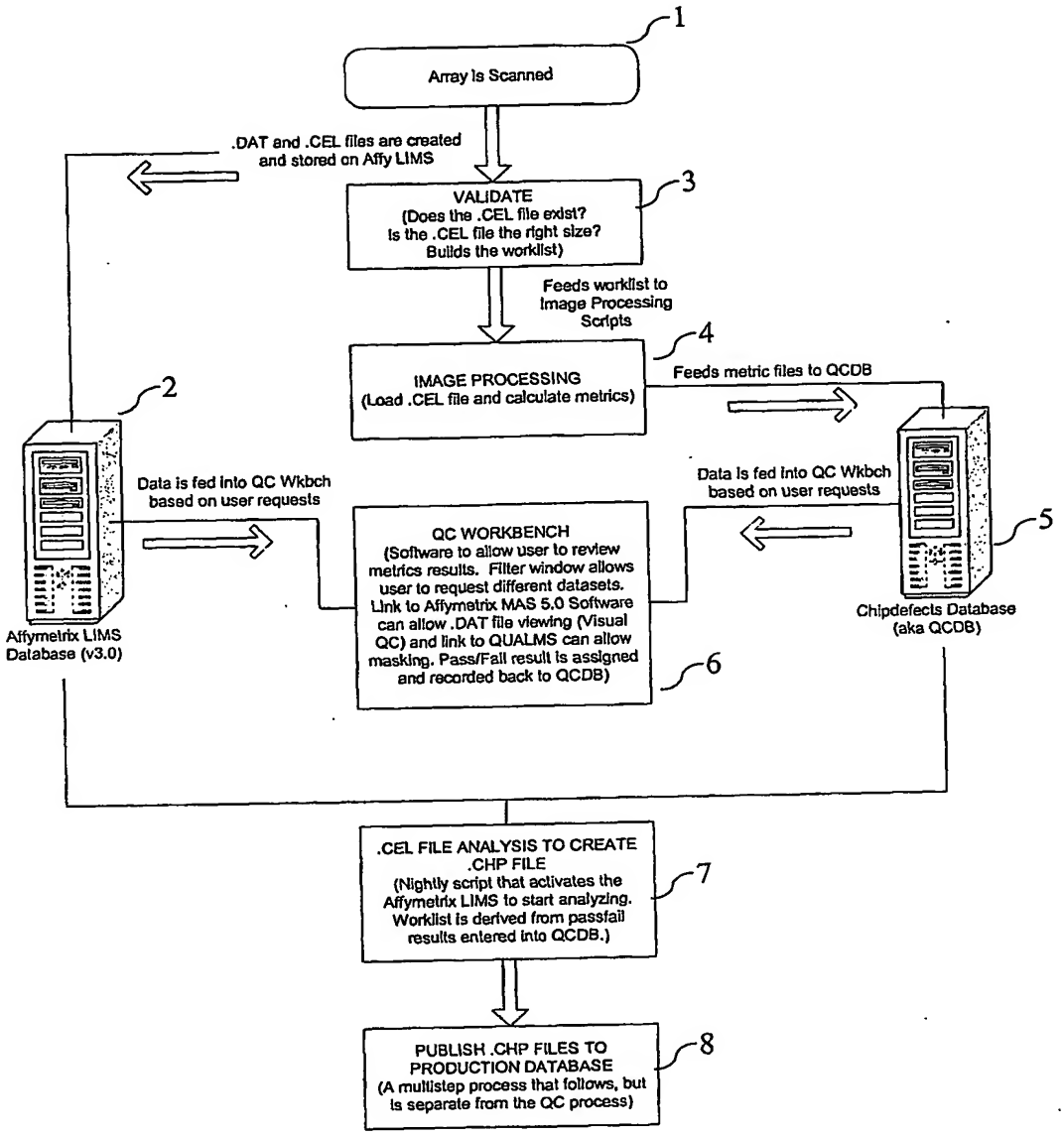

1
Array Is Scanned
.DAT and .CEL files are created and stored on Affy LIMS
VALIDATE
(Does the .CEL file exist?
Is the .CEL file the right size?
Builds the worklist)
3
Feeds worklist to Image Processing Scripts
4
IMAGE PROCESSING
(Load .CEL file and calculate metrics)
Feeds metric files to QCDB
2
Affymetrix LIMS Database (v3.0)
Data is fed into QC Wkbch based on user requests
QC WORKBENCH
(Software to allow user to review metrics results. Filter window allows user to request different datasets. Link to Affymetrix MAS 5.0 Software can allow .DAT file viewing (Visual QC) and link to QUALMS can allow masking. Pass/Fail result is assigned and recorded back to QCDB)
6
Data is fed into QC Wkbch based on user requests
5
Chipdefects Database (aka QCDB)
.CEL FILE ANALYSIS TO CREATE .CHP FILE
(Nightly script that activates the Affymetrix LIMS to start analyzing. Worklist is derived from passfail results entered into QCDB.)
7
PUBLISH .CHP FILES TO PRODUCTION DATABASE
(A multistep process that follows, but is separate from the QC process)
8

FIG. 1

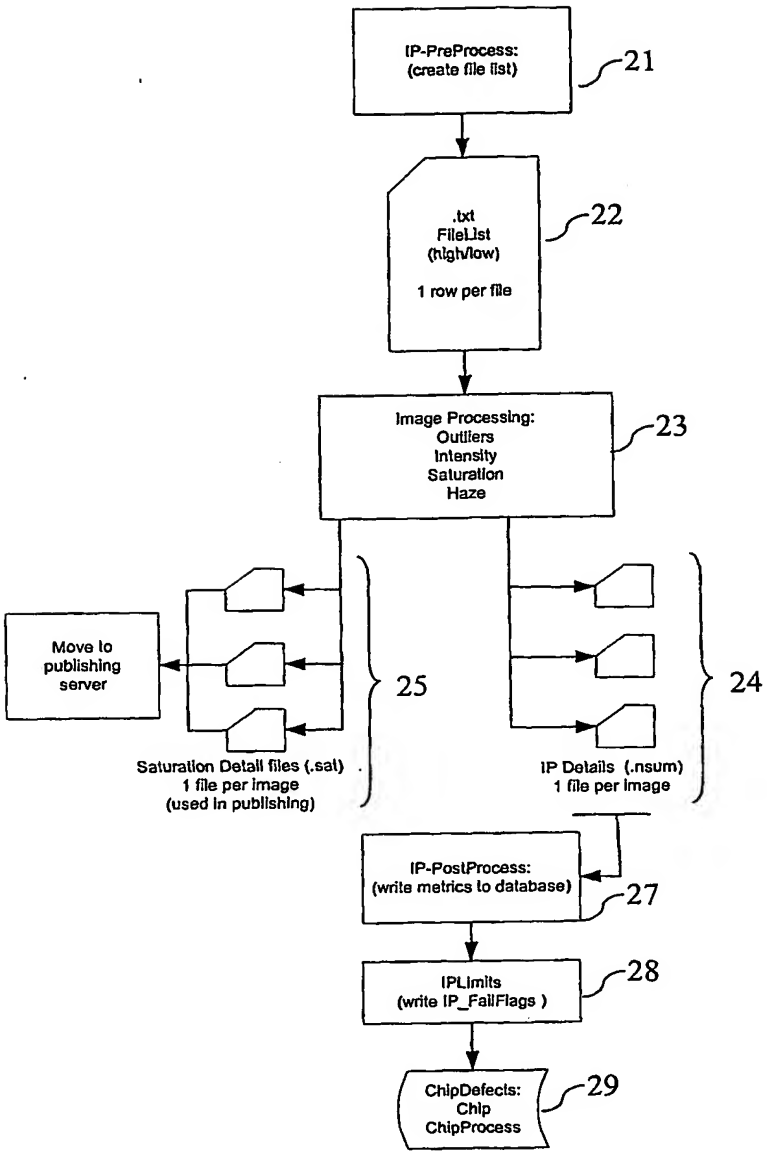


Image Processing Workflow

FIG. 2

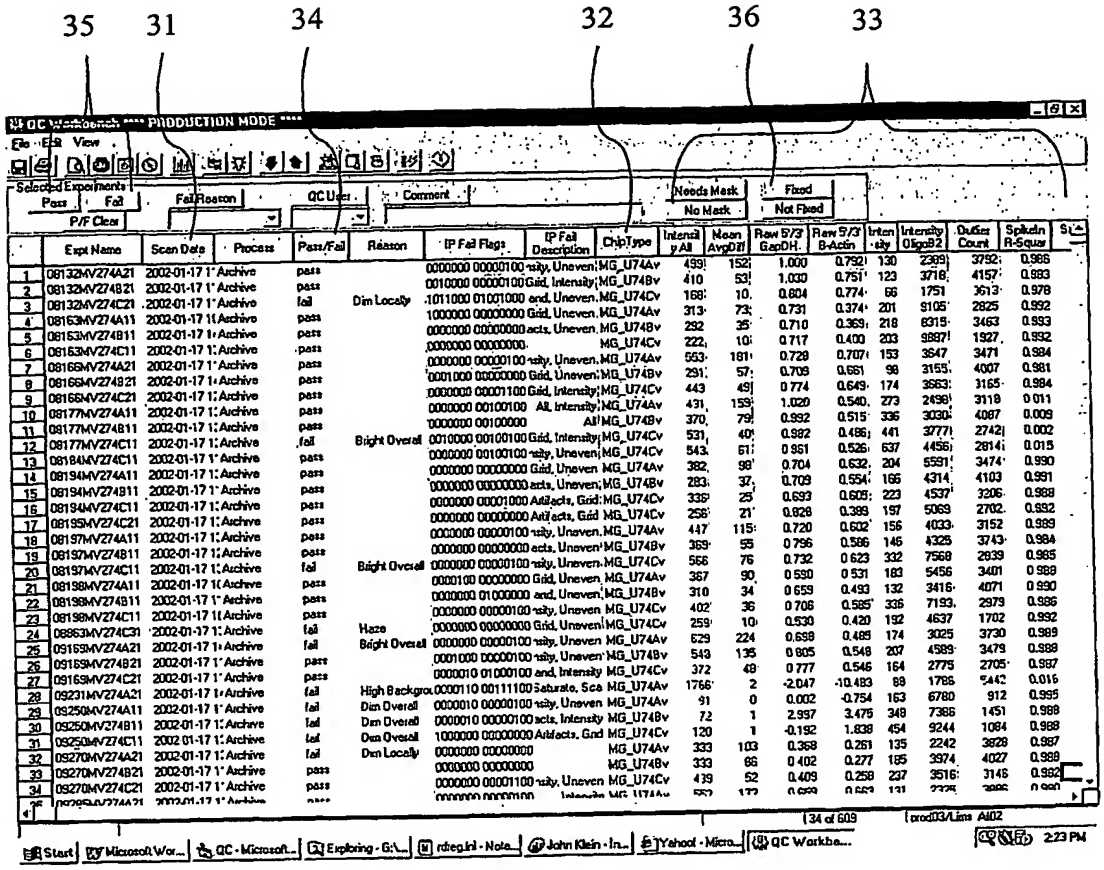
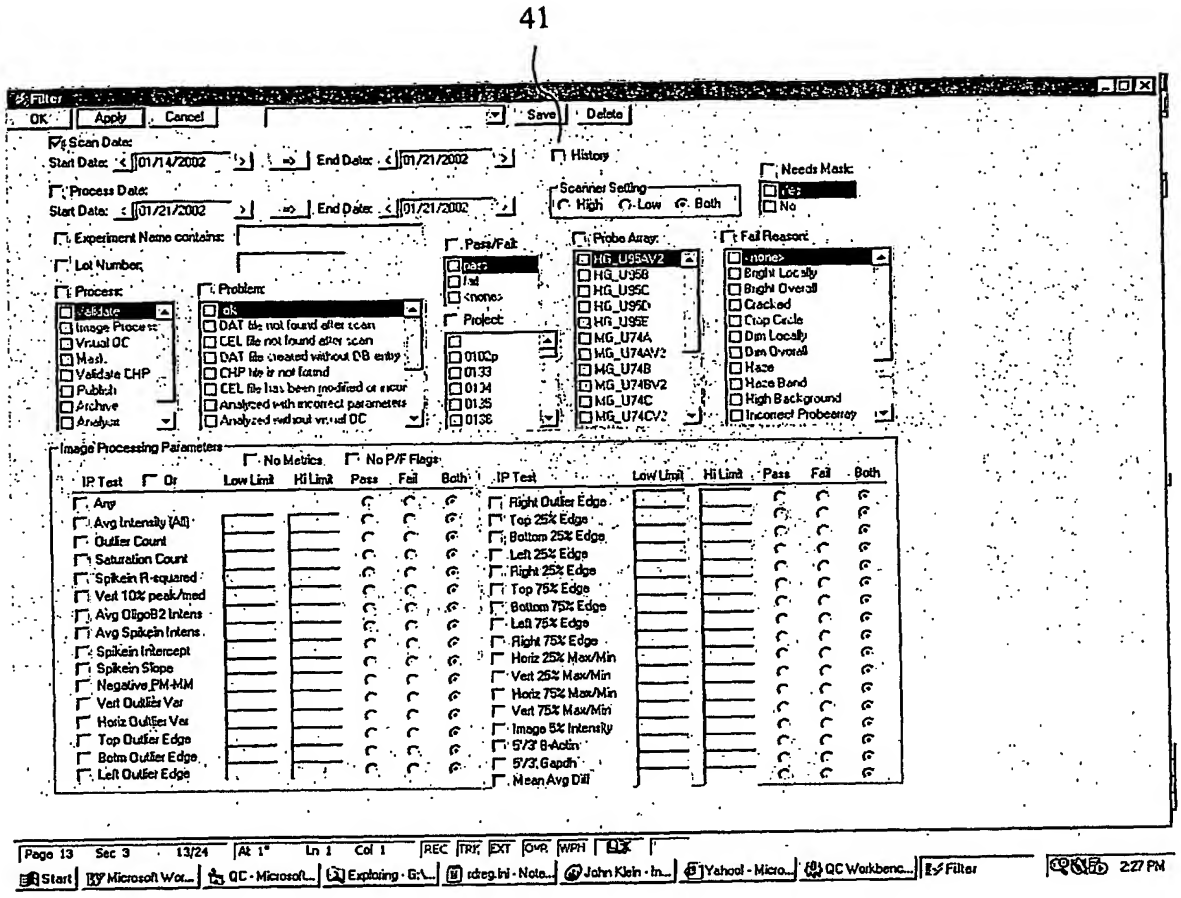

35
31
34
32
36
33
PRODUCTION MODE
File Edit View
Selected Experiments
Pass
Fail
P/F Clear
Fail Reason
QC User
Comment
Needs Mask
No Mask
Fixed
Not Fixed
Expt Name
Scan Date
Process
Pass/Fail
Reason
IP Fail Flags
IP Fail Description
ChipType
Intensity All
Mean Avg Diff
Raw 5'/3' GapDH
Raw 5'/3' B-Actin
Intensity
Intensity OligoB2
Outlier Count
SpikeIn R-Squar
08132MV274A21 2002-01-17 1' Archive pass MG_U74Av 499 152 1.000 0.792 130 2369 3792 0.966
08132MV274B21 2002-01-17 1' Archive pass MG_U74Bv 410 53 1.030 0.751 123 3718 4157 0.993
08132MV274C21 2002-01-17 1' Archive fail Dim Locally MG_U74Cv 168 10 0.804 0.774 66 1751 3613 0.978
08163MV274A11 2002-01-17 1' Archive pass MG_U74Av 313 73 0.731 0.374 201 9105 2825 0.992
08163MV274B11 2002-01-17 1' Archive pass MG_U74Bv 292 35 0.710 0.369 218 8315 3463 0.993
08163MV274C11 2002-01-17 1' Archive pass MG_U74Cv 222 10 0.717 0.400 203 9887 1927 0.992
08166MV274A21 2002-01-17 1' Archive pass MG_U74Av 553 181 0.729 0.707 153 3547 3471 0.984
08166MV274B21 2002-01-17 1' Archive pass MG_U74Bv 291 57 0.709 0.661 98 3155 4007 0.981
08166MV274C21 2002-01-17 1' Archive pass MG_U74Cv 443 49 0.774 0.649 174 3663 3165 0.984
08177MV274A11 2002-01-17 1' Archive pass MG_U74Av 431 153 1.020 0.540 273 2498 3119 0.011
08177MV274B11 2002-01-17 1' Archive pass MG_U74Bv 370 79 0.992 0.515 336 3030 4087 0.009
08177MV274C11 2002-01-17 1' Archive fail Bright Overall MG_U74Cv 531 40 0.982 0.486 441 3777 2742 0.002
08184MV274C11 2002-01-17 1' Archive pass MG_U74Cv 543 61 0.961 0.526 637 4456 2814 0.015
08194MV274A11 2002-01-17 1' Archive pass MG_U74Av 382 98 0.704 0.632 204 5591 3474 0.990
08194MV274B11 2002-01-17 1' Archive pass MG_U74Bv 283 37 0.709 0.554 166 4314 4103 0.991
08194MV274C11 2002-01-17 1' Archive pass MG_U74Cv 339 25 0.693 0.605 223 4537 3206 0.988
08195MV274C21 2002-01-17 1' Archive pass MG_U74Cv 258 21 0.828 0.388 197 5069 2702 0.992
08197MV274A11 2002-01-17 1' Archive pass MG_U74Av 447 115 0.720 0.602 156 4033 3152 0.989
08197MV274B11 2002-01-17 1' Archive pass MG_U74Bv 369 55 0.796 0.586 146 4325 3743 0.994
08197MV274C11 2002-01-17 1' Archive fail Bright Overall MG_U74Cv 566 76 0.732 0.623 332 7568 2939 0.985
08198MV274A11 2002-01-17 1' Archive pass MG_U74Av 367 90 0.550 0.531 183 5456 3401 0.988
08198MV274B11 2002-01-17 1' Archive pass MG_U74Bv 310 34 0.659 0.493 132 3416 4071 0.990
08198MV274C11 2002-01-17 1' Archive pass MG_U74Cv 402 36 0.706 0.585 335 7193 2979 0.986
08863MV274C31 2002-01-17 1' Archive fail Haze MG_U74Cv 259 10 0.530 0.420 192 4637 1702 0.992
09169MV274A21 2002-01-17 1' Archive fail Bright Overall MG_U74Av 629 224 0.658 0.485 174 3025 3730 0.989
09169MV274B21 2002-01-17 1' Archive pass MG_U74Bv 543 135 0.805 0.548 207 4589 3479 0.988
09169MV274C21 2002-01-17 1' Archive pass MG_U74Cv 372 49 0.777 0.546 164 2775 2705 0.987
09231MV274A21 2002-01-17 1' Archive fail High Backgrou MG_U74Av 1766 2 -2.047 -10.483 88 1786 5442 0.016
09250MV274A11 2002-01-17 1' Archive fail Dim Overall MG_U74Av 91 0 0.002 -0.754 163 6780 912 0.995
09250MV274B11 2002-01-17 1' Archive fail Dim Overall MG_U74Bv 72 1 2.997 3.475 348 7386 1451 0.988
09250MV274C11 2002-01-17 1' Archive fail Dim Overall MG_U74Cv 120 1 -0.192 1.838 454 9244 1084 0.988
09270MV274A21 2002-01-17 1' Archive fail Dim Locally MG_U74Av 333 103 0.368 0.261 135 2242 3828 0.987
09270MV274B21 2002-01-17 1' Archive pass MG_U74Bv 333 86 0.402 0.277 185 3974 4027 0.988
09270MV274C21 2002-01-17 1' Archive pass MG_U74Cv 439 52 0.409 0.259 237 3516 3146 0.992
34 of 609
prod03/Lims All02
Start
Microsoft Wor...
QC - Microsoft...
Exploring - G:\...
rdreg.inf - Note...
John Klein - In...
Yahoo! - Micro...
QC Workbe...
2:23 PM

FIG. 3


41
Filter
OK
Apply
Cancel
Save
Delete
Scan Date:
Start Date:
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End Date:
01/21/2002
History
Needs Mask:
Process Date:
Start Date:
01/21/2002
End Date:
01/21/2002
Scanner Setting
High
Low
Both
Yes
No
Experiment Name contains:
Lot Number:
Process:
Problem:
Pass/Fail:
Probe Array:
Fail Reason:
Project:
Image Processing Parameters
No Metrics
No P/F Flags
IP Test
Or
Low Limit
Hi Limit
Pass
Fail
Both
Any
Avg Intensity (All)
Outlier Count
Saturation Count
Spikein R-squared
Vert 10% peak/med
Avg OligoB2 Intens
Avg Spikein Intens
Spikein Intercept
Spikein Slope
Negative PM-MM
Vert Outlier Var
Horiz Outlier Var
Top Outlier Edge
Bottm Outlier Edge
Left Outlier Edge
Right Outlier Edge
Top 25% Edge
Bottom 25% Edge
Left 25% Edge
Right 25% Edge
Top 75% Edge
Bottom 75% Edge
Left 75% Edge
Right 75% Edge
Horiz 25% Max/Min
Horiz 75% Max/Min
Vert 75% Max/Min
Image 5% Intensity
5'/3' B-Actin
5'/3' Gapdh
Mean Avg Diff
Page 13
Sec 3
13/24
2:27 PM

FIG. 4

401 404 405 406

Site	Chip	ChipType	Tissue Type	IP Fail Count	IP Fail Description	Intensity All	Intens/BG	Image 5%
A	1	RG_U34A	LIVER, NOS	2	All, Artifacts, Uneven	391	5.446	72
A	2	RG_U34A	LIVER, NOS	3	All, Artifacts, Uneven	463	6.88	67
A	3	RG_U34A	LIVER, NOS	2	All, Artifacts, Uneven	529	7.317	72
A	4	RG_U34A	LIVER, NOS	1	All	365	5.105	72
A	5	RG_U34A	LIVER, NOS	1	All	556	6.864	81
A	6	RG_U34A	LIVER, NOS	1	All	469	7.528	62
A	7	RG_U34A	LIVER, NOS	2	All, Artifacts, Uneven	469	6.312	74
A	8	RG_U34A	LIVER, NOS	2	All, Artifacts, Uneven	551	8.636	64
A	9	RG_U34A	LIVER, NOS	2	All, Artifacts, Uneven	369	6.119	60
A	10	RG_U34A	LIVER, NOS	2	All, Artifacts, Uneven	453	7.906	57
A	11	RG_U34A	LIVER, NOS	1	All	337	4.849	70
A	12	RG_U34A	LIVER, NOS	2	All, Artifacts, Uneven	362	5.3	68
A	13	RG_U34A	LIVER, NOS	1	All	333	4.69	71
A	14	RG_U34A	LIVER, NOS	5	All, Artifacts, Grid, Uneven	667	9.038	74
A	15	RG_U34A	LIVER, NOS	2	All, Artifacts, Uneven	321	4.735	68
B	1	RG_U34A	LIVER, NOS	0		315	6.389	49
B	2	RG_U34A	LIVER, NOS	0		295	4.836	61
B	3	RG_U34A	LIVER, NOS	0		315	5.526	57
B	4	RG_U34A	LIVER, NOS	0		306	5.741	53
B	5	RG_U34A	LIVER, NOS	2	All, Haze Band	294	5.043	58
B	6	RG_U34A	LIVER, NOS	0		305	5.865	52
B	7	RG_U34A	LIVER, NOS	2	Artifacts, Uneven	419	6.135	68
B	8	RG_U34A	LIVER, NOS	1	Artifacts, Uneven	373	6.602	57
B	9	RG_U34A	LIVER, NOS	11	Artifacts, Haze Band, Intensity, Uneven	1294	12.686	102
B	10	RG_U34A	LIVER, NOS	2	All, Artifacts, Uneven	508	6.773	75
B	11	RG_U34A	LIVER, NOS	1	All	294	5.845	50
B	12	RG_U34A	LIVER, NOS	2	Artifacts, Uneven	399	7.087	56
B	13	RG_U34A	LIVER, NOS	1	Artifacts, Uneven	417	6.915	60
B	14	RG_U34A	LIVER, NOS	0		296	6.004	49
B	15	RG_U34A	LIVER, NOS	1	All	208	3.014	69

402

403

FIG. 4A

Negative PM-MM	Mean AvgDiff	Raw 5'/3' GapDH	Raw 5'/3' B-Actin	Intensity SpikeIns	Intensity OligoB2	LI/Wong Outliers	Saturation Count	Vert 10% peak/med	SpikeIn Intercept
46327	118	0.935	0.685	156	11733	2619	0	1.095	3.597
46522	153	0.847	0.721	238	10182	2690	0	1.105	4.146
45037	194	0.942	0.804	324	10683	2666	0	1.075	4.242
47464	107	0.95	0.729	188	11770	2681	0	1.086	4.143
46077	182	0.829	0.741	271	10916	2676	0	1.085	4.23
45626	164	0.897	0.684	427	11569	2856	2	1.073	4.934
45838	170	0.889	0.792	298	7980	2687	0	1.078	3.88
44793	195	0.873	0.684	197	10089	2823	0	1.068	4.244
45615	123	0.965	0.626	286	9582	2615	0	1.054	5.043
44523	175	0.953	0.734	243	9574	2900	0	1.094	3.806
47193	107	1.016	0.687	214	11018	2758	0	1.065	4.309
47243	101	0.909	0.699	188	12237	2620	0	1.084	3.113
46881	105	0.904	0.75	187	10477	2582	0	1.08	3.368
44376	270	0.935	0.75	331	11284	2646	0	1.108	4.146
47765	85	0.944	0.7	178	11579	2574	0	1.127	3.758
46492	110	0.866	0.692	61	2906	2598	0	1.089	4.157
47925	94	0.901	0.711	64	2652	2349	0	1.088	4.214
47385	103	0.852	0.695	70	3113	2436	0	1.166	4.345
46434	102	0.862	0.689	57	2332	2533	0	1.149	4.1
47087	85	0.88	0.723	65	2629	2421	0	1.265	4.269
45981	98	0.861	0.725	73	2835	2511	0	1.152	4.34
47663	130	0.854	0.747	75	3241	2384	0	1.064	4.382
47533	111	0.845	0.746	88	2946	2373	0	1.058	4.623
51529	266	1.012	0.581	104	4521	1761	1	1.357	4.969
46733	174	0.906	0.73	108	4516	2508	0	1.098	4.693
46909	90	0.897	0.688	54	2432	2411	0	1.13	4.056
46670	128	0.813	0.717	72	3478	2483	0	1.071	4.383
47504	118	0.866	0.659	90	4211	2347	0	1.072	4.68
46688	94	0.837	0.678	75	2793	2562	1	1.12	4.44
49044	62	0.681	0.693	48	3336	2404	0	1.046	3.894

FIG. 4B

SpikeIn Slope	Vert Outlier Var	Horiz Outlier Var	Top Outlier Edge Ratio	Bottom Outlier Edge Ratio	Left Outlier Edge Ratio	Right Outlier Edge Ratio	25% Top Edge Ratio	25% Bottom Edge Ratio	25% Left Edge Ratio
0.653	22.646	13.817	0.836	0.913	0.801	0.946	1.182	0.947	1
0.64	29.924	17.055	0.764	0.897	1.079	0.928	1.197	0.95	1.022
0.707	24.722	18.077	0.9	0.917	1.139	0.878	1.18	0.948	1.062
0.497	28.449	16.471	0.908	0.824	0.819	0.938	1.137	0.981	1.046
0.699	28.735	23.511	0.81	0.86	1.15	0.884	1.131	0.956	1.043
0.666	30.882	17.744	0.767	0.908	0.952	0.858	1.138	0.947	1.025
0.81	16.837	19.078	0.847	0.963	1.012	0.995	1.167	0.959	1.016
0.716	30.097	23.347	0.774	0.94	0.989	0.957	1.223	0.966	1.047
0.424	29.957	15.748	0.886	0.98	0.883	0.797	1.092	1.029	1.014
0.779	29.609	18.137	0.811	0.811	1.083	0.95	1.207	0.976	1.064
0.501	24.843	19.022	0.84	0.938	0.888	0.92	1.156	0.968	1.014
0.851	24.225	16.097	0.852	0.878	0.759	0.911	1.155	0.969	0.988
0.807	24.343	8.665	0.841	0.78	0.943	1.03	1.145	0.979	1.02
0.823	25.686	23.463	0.83	0.83	1.19	0.743	1.282	0.962	1.101
0.641	23.967	14.159	0.858	0.875	0.902	0.972	1.199	0.927	1.038
0.941	24.777	22.401	0.802	0.802	0.96	0.908	1.14	0.976	0.953
0:93	21.79	17.26	0.837	0.876	1.066	0.883	1.076	1.013	0.991
0.91	23.558	16.515	0.764	0.949	0.994	0.873	1.077	1.023	0.977
0.93	23.148	12.457	0.779	0.832	1.07	0.886	1.068	1.004	1.022
0.889	18.967	17.122	0.838	0.996	1.113	0.919	1.034	0.972	1.028
0.932	25.84	21.033	0.786	0.849	1.052	1.008	1.106	0.998	1.02
0.92	19.927	17.095	0.696	0.912	0.936	0.889	1.058	1.022	0.898
0.863	25.018	18.476	0.823	0.927	1.073	1.016	1.091	1.012	0.947
0.784	19.74	9.226	0.943	1.08	1.144	0.979	0.742	0.568	0.885
0.957	20.442	18.247	0.887	0.923	0.993	0.905	1.153	1.05	1.05
0.915	15.961	12.333	0.813	0.86	1.015	0.923	1.065	0.991	1.018
0.899	26.67	18.798	0.828	0.864	0.981	0.918	1.102	1.017	0.936
0.834	18.036	18.717	0.874	0.96	1.019	0.952	1.114	1.012	0.955
0.887	25.912	17.238	0.746	0.895	1.051	0.955	1.148	0.993	1.037
0.92	15.16	10.043	0.935	0.935	1.141	1.022	1.058	0.988	1.02

FIG. 4C

25% Right Edge Ratio	75% Top Edge Ratio	75% Bottom Edge Ratio	75% Left Edge Ratio	75% Right Edge Ratio	Horiz 25% Max/Min	Vert 25% Max/Min	Horiz 75% Max/Min	Vert 75% Max/Min	Affy Outliers
1.082	1.494	0.888	0.981	1.16	1.197	1.475	1.648	2.554	28
1.108	1.531	0.904	1.019	1.25	1.195	1.535	1.645	2.69	18
1.055	1.541	0.855	1.185	0.967	1.146	1.533	1.365	2.802	10
1.084	1.374	0.944	1.042	1.185	1.146	1.375	1.522	2.287	46
1.057	1.413	0.9	1.112	1.093	1.143	1.445	1.476	2.46	6
1.078	1.441	0.875	1.078	1.105	1.203	1.428	1.526	2.541	45
1.091	1.486	0.93	0.999	1.202	1.179	1.517	1.639	2.651	18
1.102	1.613	0.909	1.088	1.201	1.192	1.629	1.583	3.077	40
1.128	1.309	1.043	1.051	1.071	1.214	1.348	1.439	2.507	63
1.02	1.556	0.895	1.105	1.099	1.139	1.546	1.478	2.946	194
1.108	1.556	0.884	1.031	1.174	1.187	1.359	1.541	2.607	111
1.115	1.476	0.895	0.963	1.136	1.227	1.373	1.668	2.477	118
1.068	1.402	0.929	1.034	1.118	1.122	1.35	1.489	2.347	112
1.018	1.828	0.863	1.276	0.902	1.211	1.69	1.598	3.552	27
1.079	1.612	0.783	1.09	1.139	1.146	1.456	1.453	2.711	28
1.01	1.41	0.941	0.981	1.063	1.176	1.363	1.447	2.318	50
1.003	1.413	0.961	1.012	1.058	1.111	1.308	1.328	2.355	28
1.03	1.437	0.961	1.057	1.034	1.135	1.385	1.364	2.521	46
0.981	1.406	0.95	1.049	1.001	1.109	1.378	1.316	2.372	18
1.002	1.333	0.965	1.169	1.017	1.115	1.445	1.336	2.219	65
1.024	1.442	0.941	1.035	1.125	1.118	1.42	1.447	2.554	38
1.015	1.305	0.947	0.881	1.01	1.237	1.419	1.539	2.317	23
0.928	1.395	0.952	0.922	0.861	1.188	1.41	1.434	2.478	77
1.354	0.999	0.627	0.91	1.321	2.146	2.741	2.074	2.323	575
1.014	1.477	0.979	1.071	1.054	1.161	1.529	1.423	2.745	104
1.005	1.33	0.905	1.087	0.987	1.121	1.38	1.346	2.274	61
0.947	1.42	0.936	0.873	0.926	1.183	1.408	1.529	2.557	33
0.955	1.37	0.928	0.933	0.93	1.189	1.463	1.474	2.403	55
1	1.465	0.924	1.02	1.075	1.116	1.421	1.368	2.58	20
1.032	1.444	1.007	1.106	1.054	1.087	1.148	1.38	2.26	133

FIG. 4D

10/523499

log(Intens)/ log(BG)	SpikeIn R-Squared	Lot Num	Scanner	Fluidics	Fluid Sta	Fluid Pos
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
1.476	0.968	2001343	scanner13	fluidics03	5	1
1.383	0.973	2001343	scanner02	fluidics03	4	3
1.423	0.976	2001343	scanner09	fluidics03	3	2
1.44	0.972	2001343	scanner14	fluidics03	1	1
1.398	0.965	2001343	scanner01	fluidics03	1	4
1.448	0.971	2001343	scanner02	fluidics03	2	2
1.429	0.965	2001343	scanner15	fluidics04	3	1
1.468	0.976	2000426	scanner15	fluidics03	8	3
1.549	0.971	2000426	scanner04	fluidics04	1	3
1.443	0.962	2000426	scanner05	fluidics04	4	1
1.451	0.961	2000426	scanner14	fluidics04	2	2
1.486	0.976	2000426	scanner15	fluidics03	6	3
1.472	0.973	2000426	scanner15	fluidics03	7	4
1.46	0.978	2000426	scanner02	fluidics03	8	1
1.261	0.929	2000426	scanner05	fluidics03	5	3

FIG. 4E

IP Fail Flags
00000010 00000000 00000000 00100000
00000010 10000000 00000000 00100000
00000010 00000000 00000000 00100000
00000000 00000000 00000000 00100000
00000000 00000000 00000000 00100000
00000000 00000000 00000000 00100000
00000010 00000000 00000000 00100000
00000010 00000000 00000000 00100000
00000000 00001000 00000000 00100000
00000010 00000000 00000000 00100000
00000000 00000000 00000000 00100000
00000000 00001000 00000000 00100000
00000000 00000000 00000000 00100000
00000010 01010000 01000000 00100000
00000000 00100000 00000000 00100000
00000000 00000000 00000000 00000000
00000000 00000000 00000000 00000000
00000000 00000000 00000000 00000000
00000000 00000000 00000000 00000000
00000000 00000000 00000000 01100000
00000000 00000000 00000000 00000000
00000000 01000100 00000000 00000000
00000000 00000100 00000000 00000000
00000111 10101111 00000000 01000100
00000010 00000000 00000000 00100000
00000000 00000000 00000000 00100000
00000000 01000100 00000000 00000000
00000010 00000000 00000000 00000000
00000000 00000000 00000000 00000000
00000000 00000000 00000000 00100000

FIG. 4F

Fields	DESCRIPTION
ID	Sequence (Primary Key)
CHIPID	Not used
EXPERIMENTNA	Link to chip table
PROCESSID	From CV_PROCESS
PERSON	User or Application
DATETIME	Timestamp
HISTORY	CURRENT or HISTORY
PROBLEMID	From CV_PROBLEM (>0 if
FILENAME	Filename from Analysis or

FIG. 5

ID	DESCRIPTI
ANALYSIS	Analysis
VALIDATE	Validate
IMAGEPRO	Image
VQC	Visual QC
MASK	Mask
VALIDCHP	Validate
IMPORT	Import
PUBLISH	Publish
ARCHIVE	Archive

FIG. 6

ID	DESCRIPTION
0	ok
1	DAT file not found after scan
2	CEL file not found after scan
3	DAT file created without DB entry
4	CHP file is not found
5	CEL file has been modified or
6	Analyzed with incorrect parameters
7	Analyzed without visual QC
8	CEL file created without DB entry
9	CHP file created without DB entry
10	CEL file is older than DAT file
11	CHP file is older than CEL file
12	Failed Visual QC
13	Failed Image Processing

FIG. 7

Fields	DESCRIPTION
CHIPID	PK
EXPERIMENTNAM	From Affy
PERSON	QCUser
PROBEARRAYTY	From Affy
COMMENTS	
QCDATE	Timestamp
LOTNUMBER	From Affy
PASSFAIL	Set by qac user
DATESTAMP	Current date
FAILREASON	Reason chip failed QC – (no longer same as defect reason)
NEEDSMASK	Flag indicating image needs to be masked (set by qac user from QC
MASKED	Flag indicating has been masked ('Y') or not (blank) Set from Qualms
IP_FAILFLAGS	25 flag bits. 1=corresponding metric is out of range (failed)
IP_FAILDESCRIPT	Description of defects implied by failed metrics
IP_LIMITSVER	Version number of limits used to compute IP_FAILFLAGS
32 IP Metric columns -	IP_INTENSALL, IP_INTENSSPIKE*, IP_INTENSOLIGOB2*, IP_OUTLIERS, IP_SATUR, IP_SPIKEINR2, IP_VERT10, IP_SPIKEINICPT*, IP_SPIKEINSLOPE*, IP_NEGATIVEPP, IP_VERTOUTVAR, IP_HOROUTVAR, IP_TOPOUTEDGE, IP_BOTTOMOUTEDGE, IP_LEFTOUTEDGE, IP_RIGHTOUTEDGE, IP_TOPEDGE25, IP_BOTTOMEDGE25, IP_LEFTEDGE25, IP_RIGHTEDGE25, IP_TOPEDGE75, IP_BOTTOMEDGE75, IP_LEFTEDGE75, IP_RIGHTEDGE75, IP_HOR25MINMAX, IP_VERT25MINMAX, IP_HOR75MINMAX, IP_VERT75MINMAX, IP_INTENSE5TH, IP_53GAPDH*, IP_53BACTIN*, IP_MEANAVDIFF* *= no limits for these metrics

FIG. 8

Fields	DESCRIPTION
DEFECTID	Sequence (Primary Key)
OLDDEFECTDESCR	For historic reasons – no longer used
CLASS	Defect type
IMAGE	Not used
CHIPID	FK. Link to ChipDefects PK
QUADRANT	Not used
DEFECTDESCRIPTI	New Description, linked to CV_FAILREASON

FIG. 9

Fields	DESCRIPTION
DEFECTID	Sequence (Primary Key)
SHAPE	0=rectangle, 1-ellipse
IMAGE_LEFT	Defect location in image coordinates
IMAGE_RIGHT	
IMAGE_TOP	
IMAGE_BOTTOM	
GRID_LEFT	Defect location in cel file (grid) coordinates
GRID_RIGHT	
GRID_TOP	
GRID_BOTTOM	

FIG. 10

REASON
Bright Locally
Bright Overall
Cracked
Crop Circle
Dim Locally
Dim Overall
Haze Band
Haze
High Background
Incorrect Probearray
Incorrect Scanner Setting
No Sample
Other
Scanner Failure
Snow

FIG. 11

Column	Table	DESCRIPTION
LOT RUN ID	AFFX PHYSICAL AR	Lot Number
PROBE ARRAY NA	AFFX PHYSICAL AR	Chip Type – used to update ProbeArrayType in Chip
EXP COMMENT	AFFX ARRAY EXPER	Scanner setting (High/Low)
PROJECT NAME	AFFX SAMPLE	Project name
SCANDATE	CHIP HYB SCAN INF	Scan Date
SCANNER	CHIP HYB SCAN INF	Scanner Name
FLUIDICS	CHIP HYB SCAN INF	Fluidics Name
STATION	CHIP HYB SCAN INF	Fluidics Station
POSITION	CHIP HYB SCAN INF	Fluidics Position

FIG. 12

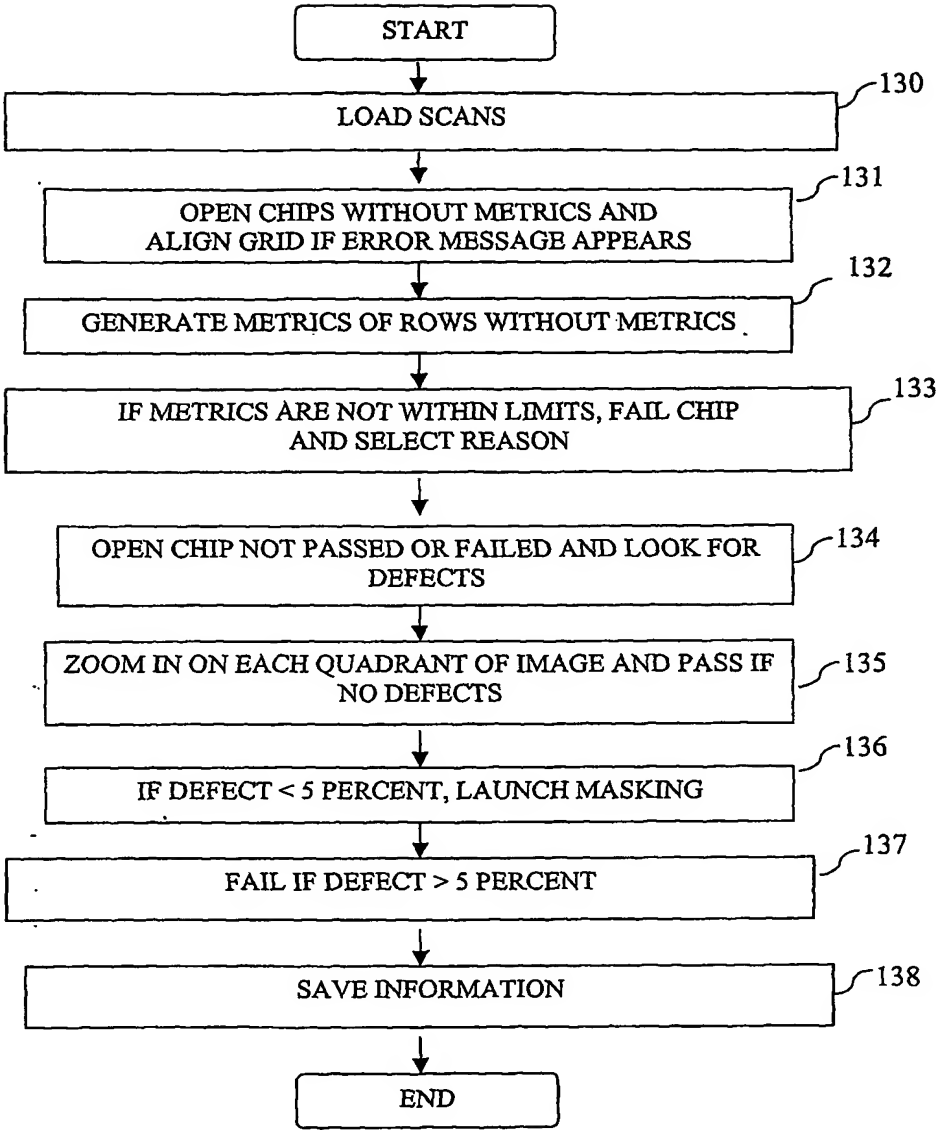
START
LOAD SCANS
130
OPEN CHIPS WITHOUT METRICS AND ALIGN GRID IF ERROR MESSAGE APPEARS
131
GENERATE METRICS OF ROWS WITHOUT METRICS
132
IF METRICS ARE NOT WITHIN LIMITS, FAIL CHIP AND SELECT REASON
133
OPEN CHIP NOT PASSED OR FAILED AND LOOK FOR DEFECTS
134
ZOOM IN ON EACH QUADRANT OF IMAGE AND PASS IF NO DEFECTS
135
IF DEFECT < 5 PERCENT, LAUNCH MASKING
136
FAIL IF DEFECT > 5 PERCENT
137
SAVE INFORMATION
138
END

FIG. 13

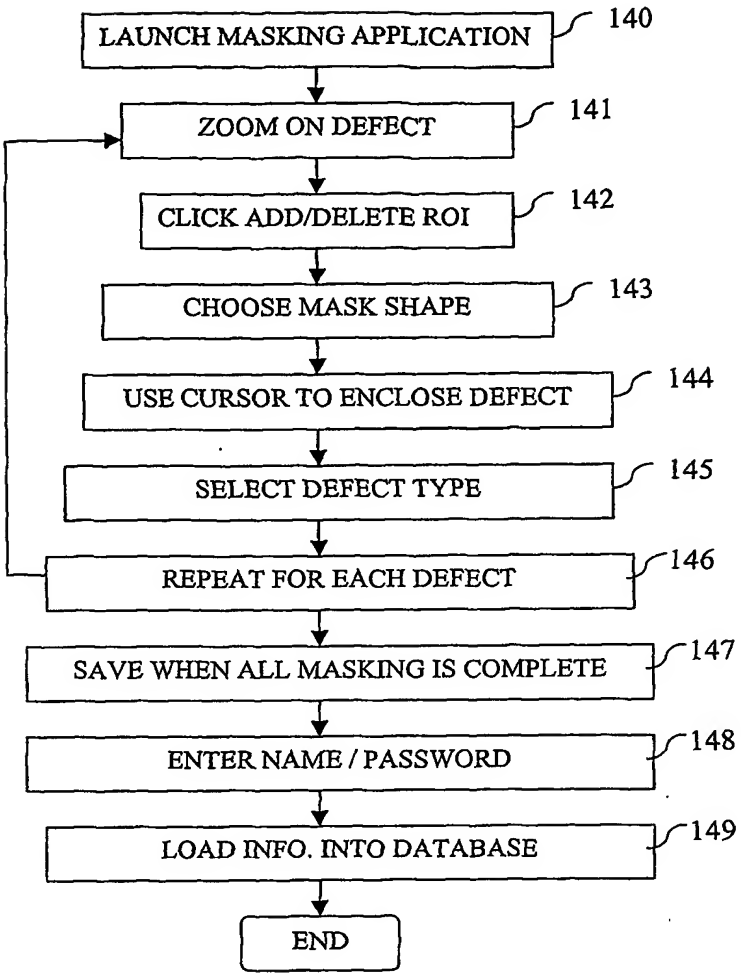
LAUNCH MASKING APPLICATION
140
ZOOM ON DEFECT
141
CLICK ADD/DELETE ROI
142
CHOOSE MASK SHAPE
143
USE CURSOR TO ENCLOSE DEFECT
144
SELECT DEFECT TYPE
145
REPEAT FOR EACH DEFECT
146
SAVE WHEN ALL MASKING IS COMPLETE
147
ENTER NAME / PASSWORD
148
LOAD INFO. INTO DATABASE
149
END

FIG. 14